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Science and art support and inform one another

by Erling Friis-Baastad

At first, the idea of training as a scientist to become an artist may appear eccentric. However, Joyce Majiski makes a strong case for the interdependence of the two broad disciplines.

"I've drawn since I was young, and it was assumed all through high school that I was going to go to arts school," says the internationally respected Yukon printmaker, painter and sculptor.

Joyce Majiski applies her knowledge of biological systems to her art. (photo: Milena Roses)

But when it came time to enroll in the University of Guelph, she defied expectations and majored in biology, while nurturing plans to enter veterinary school.

Then, as happened to so many of us, youthful plans changed during a visit to the Yukon. "I came up here in 1981 and fell in love with the place," she says.

After earning her degree, and after an extended Wanderjahr, she returned to the Yukon to work for Northern Biomes on a waterfowl study along the Dezadeash River.

"We were doing bird counts and we were doing vegetative studies and invertebrate studies -- so we were looking at the habitat as a whole, what birds ate, their whole nesting cycle, population dynamics..."

"I learned a lot."

What she learned was that the natural world is a complex layering of systems, of interrelationships and that "nothing in nature occurs in a vacuum... nothing stands alone."

Majiski has discovered that printmaking is especially conducive to portraying and understanding these interrelationships, these systems.

"You can hide things and print over them so you have this layering of history, image and colour and you can create history and depth with the work.

"To me that's just how systems work. You've got the topsoil and vegetation and you've got all these things that happen, the animals, the birds and the insects, the people and culture.

"Then there are the land forms, the geomorphology, geology, plate tectonics and glacial history.

"So there's this layering, layering, layering of things happening."

But this concentration on systems is not the only marriage of science and art, she stresses. Throughout history science and art have nurtured one another.

The classic example is Leonardo da Vinci, she says. He was a brilliant artist, draftsman and inventor. It's impossible to imagine him being informed by only one discipline.

In his day, "there wasn't such a narrow focus on whether you were one thing or another," she says. "In today's society we like to slot people."

As she describes the interdependence of science and art, one is reminded of the 18th century, a great age of naturalist explorers. They were often the physicians who accompanied naval ships on voyages around the world.

Many of these physicians were skilled draftsmen and watercolourists. Through art they sharpened their scientific perceptions and revealed the natural history of the New World to the Old.

Tools and materials are another realm where art and science meet.

While it's obvious that contemporary artists who employ video cameras and computers are melding technologies and creative possibilities, ancient painters and sculptors also relied on science in to make their objects.

Science and art have a long history of nurturing each other.

(photo: Milena Roses)

Consider the colourists, she says. From the stone ages on, artists had to be alchemists and geographers, had to understand, for instance, which rocks produced the ochres we admire on cliff faces of North America and in the caves of Europe.

And they had to understand how chemicals -- in the form of plants and minerals --

mixed, which combinations turned brown, and which turned yellow or green.

Majiski's colleague Patrick Royal recently reminded her that his fellow potters have long linked geography and chemistry in order to make choices about their materials, glazes and paints.

Majiski also mentions the dyes used by weavers and fabric makers. Her list can be extended almost indefinitely.

"So there's this link between technique and creation, but we don't really look at it this way. We look at art as being art and science as being science."

Meanwhile, scientists and artists collaborate in other mutually beneficial ways.

For an example, Majiski recalls a research project in which scientists track the movements of a viewer's eye over the surface of a painting.

"It measures perception and movement," she says. The experiment helps us understand the very fundamental process of seeing.

"The artist doesn't know what the scientist knows and the scientists look at things from their own knowledge base."

Sometimes that base can become a rut. "The marriage of those two brains is where innovation has happened."

Except for periodic dark ages, when superstition briefly dominates thought, science rarely sleeps. It is mutable. Scientists are forever adding to, expanding on, and even contradicting earlier conclusions.

Aristotle gives way to Copernicus, who gives way to Newton, who bows to Einstein.

Art works in much the same way.

Great ages of creation feature vigorous experiments in style and technique, and the questioning of much of what has gone before.

Majiski heeds that compulsion.

"I feel like I'm in transition," she says. "I still love making things that are beautiful but I'm more compelled to create things that have an idea that I have to work through and I think that's where you get back to the system again."

She is currently working on the very major project Winging North, which is scheduled to be hung in the Whitehorse Recreation Centre in the fall.

The huge undertaking features copper sculpting and copper engraving, and is also giving birth to a series of prints called Transmigrations.

These will be displayed at the ODD Gallery in Dawson City in September of 2006.

All this work is a startling amalgam of natural history, chemistry and physics, an effort to create beauty and to express ideas about the planet, its interrelationships and vulnerabilities.

For more information go to Joyce Majiski's web site at dawsonarts.com/~jmajiski.